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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/561,390

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EXAMINER

WANG, EUGENIA

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/561,390	Applicant(s) OBATA ET AL.	
	Examiner EUGENIA WANG	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-45 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Election/Restriction

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-23, and 27-45, drawn to a fuel cell system with a concentration detection unit.

Group II, claim(s) 24-34, drawn to a alcohol concentration measurement apparatus and its method of sensing.

Group III, claim(s) 35-36, drawn to a fuel storage container in conjunction with a fuel cell system.

2. The inventions listed as Groups I, II, and III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The special technical feature of Group I lies in the fuel cell system in combination with the specified concentration detection unit. The special technical feature of Group II is the concentration measurement apparatus and its specified method of operating. The special technical feature of Group III lies in the combination of a detachable fuel storage in conjunction with a fuel cell that includes a concentration detection unit, four electrode terminals, as well as a voltage application unit. Accordingly, the special technical features of all three groups are different, as set forth above. (For example, the special

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technical feature of Group I is not the same as that of Group III, as Group I's feature is drawn towards a fuel cell system and concentration detection unit combination and Group III's special technical feature is drawn to the combination of a fuel tank, fuel cell system with concentration detection unit, a voltage application unit, and four electrodes.)

3. This application contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

The species are as follows:

Upon election of **Group I**, the following species election is required.

Species A: Claims 1-7 and 16-23, wherein the concentration detection is based on an alteration of the proton conductivity of the polymer membrane

Species B: Claims 8-15 and 37-45, wherein the concentration detection is based on the size change of the polymer membrane.

Upon the election of **Group II**, the following species election is required.

Species A: Claims 24-25 and 28-30, wherein the concentration detection is based on an alteration of the proton conductivity of the polymer membrane.

Species B: Claims 26-27 and 31-34, wherein the concentration detection is based on the size change of the polymer membrane.

Upon the election of **Group II, Species B**, a further subspecies election is required.

Subspecies 1: Claims 26-27, 31, 32, wherein the concentration detection unit uses a strain gauge.

Subspecies 2: Claims 26, 31, and 33, wherein the concentration detection unit uses a capacitor.

Subspecies 3: Claims 26, 31, and 34, wherein the concentration detection unit uses the frequency of a quartz oscillator.

Claims 26 and 31 are generic with respect to Group II, Species B.

Upon the election of **Group III**, the following species election is required.

Species A: Claim 35, wherein the concentration detection is based on an alteration of the proton conductivity of the polymer membrane

Species B: Claim 36, wherein the concentration detection is based on the size change of the polymer membrane (strain gauge).

Applicant is required, in reply to this action, to elect a single species to which the claims shall be restricted if no generic claim is finally held to be allowable. The reply must also identify the claims readable on the elected species, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered non-responsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

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4. The claims are deemed to correspond to the species listed above in the following manner:

Group I, Species A – claims 1-7 and 16-23

Group I, Species B – claims 8-15 and 37-45

Group II, Species A – claims 24-25 and 28-30

Group II, Species B1 – claims 26-27 and 31-32

Group II, Species B2 – claims 26, 31, and 33

Group II, Species B3 – claims 26, 31, and 34

Group III, Species A – claim 35

Group III, Species B – claim 36

The following claim(s) are generic: None.

5. The species listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, the species lack the same or corresponding special technical features for the following reasons:

With respect to Group I, the special technical feature of Species A is measuring concentration using conductivity of the polymer electrolyte membrane, while the special technical feature of Species is measuring concentration using a size change.

With respect to Group II, the Special technical feature of Species A is measuring concentration using conductivity of the polymer electrolyte membrane, while the special technical feature of Species is measuring concentration using a size change.

With respect to the subspecies of Group II, Species B. Each subspecies has a different special technical feature. Subspecies 1's special technical feature is the use of

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a strain gauge. Subspecies 2's special technical feature is the use of a capacitor.

Subspecies 3's special technical feature is the use the frequency of quartz oscillation.

With respect to Group III, the special technical feature of Species A is measuring concentration using conductivity of the polymer electrolyte membrane, while the special technical feature of Species is measuring concentration using a size change.

6. This election/restriction is deemed complex, since it includes plural groups and species election requirements. No phone call was made with accordance to MPEP § 812.01.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EUGENIA WANG whose telephone number is (571)272-4942. The examiner can normally be reached on 7 - 4:30 Mon. - Thurs., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/E. W./

Examiner, Art Unit 1795

/PATRICK RYAN/

Supervisory Patent Examiner, Art Unit 1795